



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,003	12/27/2004	Shinji Naruse	2004_2036A	7588
513 7590 07/23/2009 WENDEROTH, LIND & PONACK, L.L.P. 1030 15th Street, N.W., Suite 400 East Washington, DC 20005-1503			EXAMINER ALEJANDRO, RAYMOND	
			ART UNIT 1795	PAPER NUMBER
			MAIL DATE 07/23/2009	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/519,003

Applicant(s)

NARUSE, SHINJI

Examiner

Raymond Alejandro

Art Unit

1795

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-15 is/are pending in the application.
- 4a) Of the above claim(s) 13 and 14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12 and 15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(c), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(c) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 07/14/09 has been entered.

The following Examiner's action is provided in reply to the amendment filed in connection with the foregoing RCE. All of the art rejections as applied in the prior office action have been overcome by the applicant. Refer to the foregoing amendment for additional details concerning applicant's rebuttal arguments and remarks. However, the present claims are again rejected over newly discovered art as formulated *infra* for the reasons of record:

Election/Restrictions

1. Claims 13-14 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 05/07/08 and the office action dated 07/14/08.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 12 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Lam et al 6630416.

The present application is to a separator wherein the disclosed inventive concept comprises a coating material thereon.

Lam et al disclose a fibrous base material comprising a first layer of fibrillated aramid fibers and a second layer of friction modifying particles (COL 1, lines 9-15/CLAIMS 1, 17 and 23) wherein the secondary layer is deposited on the primary layer to form the fibrous base material and such a second layer is made of a material such as silica or silica particles (COL 9, lines 18-25). Lam et al disclose that the use of fibrillated aramid fibers provides a material having a more porous structure. Such a porous structure is typically defined by the pore size and liquid permeability (COL 7, lines 45-65). With respect to porosity, Lam et al amply discuss pore sizes and air permeability as well as higher mean flow pore diameter characteristics (COL 7, lines 45 to COL 8, lines 10). It is imperative to note that Lam et al is strictly concerned with providing a material made of aramid fibers per se (COL 1, lines 9-15 & COL 8, Lines 30-35), and optionally including other materials (**←emphasis added**) (COL 1, lines 9-15). Thus, the base material of the first layer is composed of aramid fibers itself, and there is no need to add any one of those materials disclosed by Lam et al as optional. Moreover, if applicant takes the position that the base material of Lam et al does not consist essentially of aramid fibers per se because other materials may be included therein as fillers (a point not conceded by the examiner), it is

also imperative to note that Lam et al disclose that it is useful to put "silica fillers" in the primary layer (COL 8, lines 37-44). *Thus, Lam et al readily envision forming a porous element made of substantially the same materials as the materials claimed by the applicant.* Additionally, since the friction modifying particle coated fibrous base material of Lam has high porosity or remains porous, it fully satisfies the requirement that the amount of the coated material does not fully clog the pores or that the pores of the material are not substantially clogged as instantly claimed (COL 10, lines 5-10 and COL 12, lines 5-10).

1st Examiner's note: as to the transitional phrase "consisting essentially of", ***MPEP***

2111.03 Transitional Phrases establishes the following:

*A) The transitional phrase "consisting essentially of" limits the scope of a claim to the specified materials or steps "and those that do not materially affect the basic and novel characteristic(s)" of the claimed invention. In re Herz, 537 F.2d 549, 551-52, 190 USPQ 461, 463 (CCPA 1976) (emphasis in original) (Prior art hydraulic fluid required a dispersant which appellants argued was excluded from claims limited to a functional fluid "consisting essentially of" certain components. In finding the claims did not exclude the prior art dispersant, the court noted that appellants' specification indicated the claimed composition can contain any well-known additive such as a dispersant, and there was no evidence that the presence of a dispersant would materially affect the basic and novel characteristic of the claimed invention. The prior art composition had the same basic and novel characteristic (increased oxidation resistance) as well as additional enhanced detergent and dispersant characteristics). In this regard, it is noted that the **as-filed specification** discloses the following: "As a material for separator, there are often used aramid, polyester, polypropylene, polyethylene, polyphenylene sulfide, fluoroplastic,*

Art Unit: 1795

polyvinyl alcohol, PBO, polyimide, glass, carbon, alumina, natural fiber, and natural pulp... **There is however no particular restriction on materials** insofar as they have higher resistance than electrode or the like in electrical and electronic parts” (**applicant’s specification, paragraph bridging pages 2-3**). Note that there are disclosed at least 14 materials, and among those 14 materials, there are disclosed generic materials (*i.e. fluoroplastic, natural fiber, natural pulp, glass, alumina, and the like*) potentially including hundreds (100s), not to say thousands (1000s) of other materials. Thus, the as-filed specification appears to indicate that ANY material or composition (composite) could be used as long as it has a higher resistance, thus, the composition of the separator as instantly claimed does not appear to affect the basic and novel characteristic of the claimed invention.

B) For the purposes of searching for and applying prior art under 35 U.S.C. 102 and 103, absent a clear indication in the specification or claims of what the basic and novel characteristics actually are, “consisting essentially of” will be construed as equivalent to “comprising.” See, e.g., PPG, 156 F.3d at 1355, 48 USPQ2d at 1355.

C) If an applicant contends that additional steps or materials in the prior art are excluded by the recitation of “consisting essentially of,” applicant has the burden of showing that the introduction of additional steps or components would materially change the characteristics of applicant’s invention. In re De Lajarte, 337 F.2d 870, 143 USPQ 256 (CCPA 1964). See also Ex parte Hoffman, 12 USPQ2d 1061, 1063-64 (Bd. Pat. App. & Inter. 1989).

2nd Examiner’s note: as for the limitation “a separator for electrical and electronic parts”, a recitation of the intended use of the claimed invention must result in a structural

difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. However, it is noted that the resulting friction material of Lam et al finds application in electrical and electronic parts, devices, systems or apparatus as instantly claimed

3rd Examiner's note: *as to the method limitation "subject to heat treatment before and/or after coated", it is noted that a method limitation incorporated into a product claim does not patentably distinguish the product because what is given patentable consideration is the product itself and not the manner in which the product was made. Therefore, the patentability of a product is independent of how it was made. As a result, the process steps of a product-by-process claim do not impart any significant property or structure to the claimed end product. And, if there is any difference, the difference would have been minor and obvious. Determination of patentability of a product-by-process claim is based on the scope of the product itself.*

"[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product by process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process."
In re Thorpe 777 F.2d 695, 698, 227 USPQ 964,966 (Fed Cir. 1985) and MPEP 2113.

4th Examiner's note: *the specific "sucking height" (or electrolyte retention) is deemed to be an inherent property or characteristic of the separator which is associated to the construction material thereof and its coating. For instance, applicant states that "The separator of this invention which has been coated in the aforementioned manner has good electrolyte retention owing to coating". "The electrolyte retention of the coated separator of this invention as shown by the above-mentioned formula (1) [equation 1 $\rightarrow h_2 \eta / \gamma$] is 0.7 mm or more" (See applicant's*

specification at page 5, lines 3-21). Thus, having been made both separators (applicant's separator and the prior art separator) of the same construction material, then, it can be fairly argued that the separator of the prior art must have the same properties.

Accordingly, products of identical chemical composition can not have mutually exclusive properties, and thus, the claimed property (i.e. the specific "sucking height" or electrolyte retention), is necessarily present in the prior art material.

"Products of identical chemical composition can not have mutually exclusive properties." A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

See MPEP 2112.01 [R-3] Composition, Product, and Apparatus Claims

Thus, the present claims are anticipated.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).
7. Claims 12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shinohara et al 2002/0156140 in view of Tanaka et al 5076864.

Shinohara et al disclose a porous para-aramid film comprising a porous film made of aramid (0076-0077, 0088). Essentially, Shinohara et al *makes it clear* that “only aramid coated-film was sandwiched by aramid felts, and pushed to a heat drum... to produce a porous film” (0077, 0088). Thus, Shinohara et al specifically disclose that the porous film is made only of aramid materials. **EXAMPLE 2** exemplifies the formation of a porous aramid film per se. With respect to the porosity, Shinohara et al amply discuss the presence of vacant spaces (0025, 0077, 0057, CLAIM 4). There is disclosed that the film is usually made of fibrils of aramid, and has the form of non-woven fabric, microscopically (P0024). Shinohara et al’s aramid film is suitable for a base substrate for printed circuit board in the electronic apparatus field (Abstract, 0001-0002, 0078).

1st Examiner's note: as to the transitional phrase "consisting essentially of", in the event that applicant takes the position that Shinohara et al does not disclose a porous film consisting essentially of the aramid-based materials as disclosed (which the examiner does not admit), it is noted that the same principles discussed supra with respect the above transitional phrase applies with equal force to the analysis of this rejection.

Shinohara et al teach a porous film made of aramid materials per se as discussed above. However, Shinohara et al does not expressly disclose the specifically claimed coating material. As to claims 12 and 15:

Tanaka et al disclose a multilayer printed wiring board (*the electrical/electronic part*) (Abstract/COL 1, lines 5-10 and 20-23/COL 3, lines 37-40) wherein the materials which can be used for laminating the internal layer boards include reinforcing material or a base material such as silica and/or aramid fabric (COL 3, lines 10-25). Tanaka et al expressly disclose that mixtures thereof (*←emphasis supplied*) can be employed therein (COL 3, lines 21-22). *Thus, Tanaka et al at once envisage combining both materials in an electrical/electronic part to form a separating feature therein.*

1st Examiner's note: as to the method limitation "subject to heat treatment before and/or after coated", it is noted that a method limitation incorporated into a product claim does not patentable distinguish the product because what is given patentably consideration is the product itself and not the manner in which the product was made. Therefore, the patentability of a product is independent of how it was made. As a result, the process steps of a product-by-process claim do not impart any significant property or structure to the claimed end product. And, if

there is any difference, the difference would have been minor and obvious. Determination of patentability of a product-by-process claim is based on the scope of the product itself.

"[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product by process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process."
In re Thorpe 777 F.2d 695, 698, 227 USPQ 964,966 (Fed Cir. 1985) and MPEP 2113.

2nd Examiner's note: the specific "sucking height" (or electrolyte retention) is deemed to be an inherent property or characteristic of the separator which is associated to the construction material thereof and its coating. For instance, applicant states that "The separator of this invention which has been coated in the aforementioned manner has good electrolyte retention owing to coating". "The electrolyte retention of the coated separator of this invention as shown by the above-mentioned formula (1) [equation 1 $\rightarrow h_2\eta/\gamma$] is 0.7 mm or more" (See applicant's specification at page 5, lines 3-21). Thus, having been made both separators (applicant's separator and the prior art separator) of the same construction material, then, it can be fairly argued that the separator of the prior art must have the same properties.

Accordingly, products of identical chemical composition can not have mutually exclusive properties, and thus, the claimed property (i.e. the specific "sucking height" or electrolyte retention), is necessarily present in the prior art material.

"Products of identical chemical composition can not have mutually exclusive properties." A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

See MPEP 2112.01 [R-3] Composition, Product, and Apparatus Claims

In view of the above, it would have been obvious to a skilled artisan at the time the invention was made to use the silica material of Tanaka et al as a reinforcing laminating (coating) material in the porous film of Shinohara et al as Tanaka et al disclose that such a silica material is a useful reinforcing material for producing a multilayer (a coated material) printed circuit board and/or assists in strikingly reducing or completely preventing physical and chemical phenomenon associated with exposing printing circuit board materials to their working environments. Thus, it is advantageous to deposit a silica coating layer on a printed circuit board material for the reasons discussed by Tanaka et al.

8. Claims 12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shinohara et al 2002/0156140 in view of Curcio et al 2002/0179334.

Shinohara et al disclose a porous para-aramid film comprising a porous film made of aramid (0076-0077, 0088). Essentially, Shinohara et al ***makes it clear*** that “only aramid coated-film was sandwiched by aramid felts, and pushed to a heat drum... to produce a porous film” (0077, 0088). Thus, *Shinohara et al specifically disclose that the porous film is made only of aramid materials.* **EXAMPLE 2** exemplifies the formation of a porous aramid film per se. With respect to the porosity, Shinohara et al amply discuss the presence of vacant spaces (0025, 0077, 0057, CLAIM 4). There is disclosed that the film is usually made of fibrils of aramid, and has the form of non-woven fabric, microscopically (P0024). Shinohara et al’s aramid film is suitable for a base substrate for printed circuit board in the electronic apparatus field (Abstract, 0001-0002, 0078).

1st Examiner's note: as to the transitional phrase "consisting essentially of", in the event that applicant takes the position that Shinohara et al does not disclose a porous film consisting essentially of the aramid-based materials as disclosed (which the examiner does not admit), it is noted that the same principles discussed supra with respect the above transitional phrase applies with equal force to the analysis of this rejection.

Shinohara et al teach a porous film made of aramid materials per se as discussed above. However, Shinohara et al does not expressly disclose the specifically claimed coating material. As to claims 12 and 15:

Curcio et al disclose an interconnect between layers of a multilayer circuit board or printed wiring board or chip carrier material (*the electrical/electronic part*) (Abstract/P0002-0004, 0029) wherein the first layer 12A therefor includes a reinforced material such as silica and additionally the first layer 12A may include polyamide films having an adhesive layer on either side such as an aramid paper (P0029). Thus, Curcio et al at once envisage combining both materials in an electrical/electronic part to form a separating feature therein.

1st Examiner's note: as to the method limitation "subject to heat treatment before and/or after coated", it is noted that a method limitation incorporated into a product claim does not patentable distinguish the product because what is given patentably consideration is the product itself and not the manner in which the product was made. Therefore, the patentability of a product is independent of how it was made. As a result, the process steps of a product-by-process claim do not impart any significant property or structure to the claimed end product. And, if there is any difference, the difference would have been minor and obvious. Determination of patentability of a product-by-process claim is based on the scope of the product itself.

"[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product by process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process."
In re Thorpe 777 F.2d 695, 698, 227 USPQ 964,966 (Fed Cir. 1985) and MPEP 2113.

2nd Examiner's note: the specific "sucking height" (or electrolyte retention) is deemed to be an inherent property or characteristic of the separator which is associated to the construction material thereof and its coating. For instance, applicant states that "The separator of this invention which has been coated in the aforementioned manner has good electrolyte retention owing to coating". "The electrolyte retention of the coated separator of this invention as shown by the above-mentioned formula (1) [equation 1 $\rightarrow h_2 \eta / \gamma$] is 0.7 mm or more" (See applicant's specification at page 5, lines 3-21). Thus, having been made both separators (applicant's separator and the prior art separator) of the same construction material, then, it can be fairly argued that the separator of the prior art must have the same properties.

Accordingly, products of identical chemical composition can not have mutually exclusive properties, and thus, the claimed property (i.e. the specific "sucking height" or electrolyte retention), is necessarily present in the prior art material.

"Products of identical chemical composition can not have mutually exclusive properties." A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).
See MPEP 2112.01 [R-3] Composition, Product, and Apparatus Claims

In view of the above, it would have been obvious to a skilled artisan at the time the invention was made to use the silica material of Curcio et al as a reinforcing coating material in

the porous film of Shinohara et al as Curcio et al disclose that such a silica material is a useful reinforcing material for producing a multilayer (a coated material) circuit board and/or assists in enhancing layer to layer interconnection and electrical conductivity. Thus, it is advantageous to deposit a silica coating layer on a circuit board material for the reasons discussed by Curcio et al.

Response to Arguments

9. Applicant's arguments with respect to claims 12 and 15 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond Alejandro whose telephone number is (571) 272-1282. The examiner can normally be reached on Monday-Thursday (8:00 am - 6:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Raymond Alejandro/
Primary Examiner, Art Unit 1795